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00214 RF05

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ROCKY FLATS PROJECT OFFICE
10808 HIGHWAY 93, UNIT A
GOLDEN, COLORADO 80403-8200

APR 15 2005

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DIST.	LTR	ENC
BERARDINI, J.H.	X	X
BOGNAR, E.S.	X	X
BROOKS, L.	X	X
CARPENTER, M.	X	X
CIUCCI, J.A.		
CROCKETT, G. A.	X	X
DECK, C. A.	X	X
DEGENHART, K. R.	X	X
DEL VECCHIO, D.		
DIETER, T. J.		
FERRERA, D. W.	X	X
GIACOMINI, J. J.		
GILPIN, H.		
LINDSAY, D. C.	X	X
LONG, J. W.		
MARTINEZ, L. A.	X	
NAGEL, R. E.	X	
NESTA, S.		
NORTH, K.		
SHELTON, D. C.	X	X
SPEARS, M. S.	X	X
TUOR, N. R.	X	X
WIEMELT, K.	X	X
WILLIAMS, J. L.		
ZAHM, C.	X	X
Ward, D.	X	X
Nearing, J.	X	X

Mr. Steve Gunderson
RFCA Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South, OE-B2
Denver, CO 80246-1530

Mr. Mark Aguilar
Rocky Flats Team Lead
United States Environmental Protection Agency, Region VIII
999 18th Street, Suite 500
Denver, CO 80202-2466

Dear Mr. Gunderson and Mr. Aguilar:

Pursuant to the Rocky Flats Cleanup Agreement (RFCA), Attachment 5, Rocky Flats Environmental Technology Site (Site) Action Level and Standards Framework for Surface Water, Groundwater, and Soils (ALF), Section 2.4 (B), the Department of Energy (DOE), Rocky Flats Project Office (RFPO) is notifying you of water quality monitoring results at the RFCA Point of Evaluation (POE) surface water monitoring station location GS10, which is located in the South Walnut Creek upstream of Pond B-1 in Walnut Creek basin, and to provide an outline of proposed source evaluation and mitigation efforts in response to water-quality monitoring results.

The calculated 30-day moving average for plutonium-239,240 (Pu) and americium-241 (Am) triggered the reporting requirements under RFCA Attachment 5, Section 2.4 (B) for the period February 2, 2005 through February 23, 2005 inclusive, using validated data. Additional data recently received but not validated extend the event through March 13, 2005 (for details, see Table 1). As of March 13, 2005, the 30-day average for both Pu and Am remained at a reportable level. The end of the reportable period will be determined when the Site receives subsequent validated analytical results. Analytical results for all samples that were used in the calculation are listed in Table 2. The RFPO gained knowledge of the reportable value on March 31, 2005. Preliminary notice was also given to the RFCA Project Coordinators. This was accomplished via email on March 31, 2005.

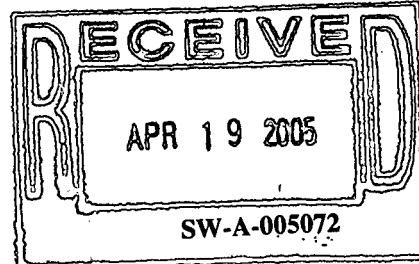
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ADMIN. RECORD	X	X
PATS/130		

Reviewed for Addressee
Corres. Control RFP4/19/05 By *LC*

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DOE ORDER #

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ADMIN RECORD

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Table 1 – Reportable 30-Day Average Values for RFCA POE Monitoring Location GS10 Using Validated Data

Analyte	Dates of Reportable Value	Range of Reportable 30-day Avg. Values (pCi/L)
Plutonium	2/2/05 – to be determined	0.17 – 0.56
Americium	2/2/05 – to be determined	0.17 – 1.0

Table 2 – Analytical Results for Composite Samples Collected at GS10 Used in the 30-Day Average Calculations (Validated through 2/1/2005 Sample).

Composite Sample Start Date	Americium Analytical Result (pCi/L)	Plutonium Analytical Result (pCi/L)
12/28/2004	0.011	0.008
1/13/2005	0.101	0.177
2/1/2005	1.53	0.767
2/24/2005	0.582	1.01

RFCA Reporting Protocol

To meet the RFCA commitment, DOE must transmit more comprehensive information to the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) within the 15-day reporting period, which ends April 15, 2005. In addition, RFCA also requires that the DOE, within 30 days of gaining knowledge of the reportable results, submit to EPA and CDPHE a source evaluation plan addressing this reportable value. This letter serves as the plan for that source evaluation, based on consideration for other evaluative work already performed in this drainage.

Downstream Water Quality Monitoring

Water flowing through GS10 also passes through the lower B-series ponds (Ponds B-4 and B-5) and South Walnut Creek before leaving the Site. RFCA Points of Compliance (POCs) GS08 (Pond B-5 outlet) and GS03 (Walnut Cr. at Indiana St.) again monitor this water. The GS10 analytical results and the reportable 30-day average values were compared with those for pre-discharge samples collected from Pond B-5 prior to the March 2005 direct discharge and from RFCA POC monitoring stations GS08 and GS03

for the March discharge (3/15 – 3/31/05). Monitoring results from Pond B-5 (pre-discharge sample) met all applicable water-quality criteria. Not all of the analytical results for composite samples collected at GS08 (3 samples) and GS03 (4 samples) had not been received by the Site as of April 13, 2005. However, the analytical results received from these locations are not above reportable levels.

Previous GS10 Source Investigations

Kaiser-Hill Company, LLC (Kaiser-Hill) completed the latest of seven special source investigation reports for the GS10 sub-drainage in December 2004. This investigation, the *Final Source Evaluation Report for Points of Evaluation GS10, SW027, and SW093: Water Year 2004*, was designed to identify location-specific sub-drainage areas that may contain source areas and further define or resolve the causes of reportable values at RFETS POEs. The results of this source evaluation and routine analysis presented in the Annual Automated Surface-Water Monitoring Reports for the GS10 sub-drainage have not identified a distinct source area suggesting the need for an accelerated action. The evaluation continued to suggest that water-quality measurements at GS10 are the result of diffuse, low-level actinide contamination associated with soils and sediments from past Site operations released to the environment through events and conditions over past years. This actinide contamination is transported with suspended solids in surface-water runoff during precipitation events.

In response to these findings, the Site enhanced the preexisting program of erosion controls to further prevent the movement of soils and sediments and to protect storm water and surface-water quality. The increased activities of building removal and soil disturbance require rigorous erosion control methods. A number of control methods are currently being used, from straw bales and wattles to soil tackifiers and erosion blankets. Ultimately, disturbed areas are closed and revegetated.

Preliminary Loading Analysis Results

When these reportable actinide concentrations were initially observed, Kaiser-Hill completed a preliminary loading analysis within the sub-drainages upstream of GS10. The observed relative loadings upstream of GS10 during Water Year 2005 to-date are discussed here. A map, indicating the approximate areas served by each sub-drainage monitoring location, and two bar charts summarizing the loading observations for both Pu and Am are enclosed with this report.

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Referring to the enclosed map and charts we observe that the GS40 sub-drainage, which gages the central Industrial Area (including the areas around B707 and the 750 Pad, but excluding B776) is contributing a majority of both the Pu and Am load measured at GS10. The next greatest contributor is the area immediately tributary to GS10.

Both of these areas have been experiencing significant soil disturbances and increased traffic loads due to the wholesale demolition of structures, construction of functional channels, culvert removals, and transport of debris in those areas. In addition, a water line break on February 19, 2005 resulted in large quantities of water flowing through the functional channel construction area. While much remains to be investigated to understand the details of this preliminary loading analysis, the general trend suggests that continued use of aggressive erosion control measures is appropriate.

Recommendation

The findings and conclusions of the recent GS10 source evaluations suggest that low-level distributed actinide source areas exist within the GS10 sub-drainage. Additionally, variable Pu/Am activity ratios in the surface water during the reportable events suggest that more than one source area may be contributing to GS10. The recent source evaluations also concluded that ongoing Rocky Flats activities (i.e., Decontamination and Decommissioning and Environmental Restoration projects, excavations, or other routine operations) did not expose any new sources of significant contamination tributary to GS10. However, significant progress towards closure has resulted in large areas of disturbed soils. Preliminary data evaluation suggests that, though no new source terms have been identified, increases in soil/sediment transport have been occurring. This increased sediment transport seems to have somewhat changed the profile of Pu/Am loading at GS10.

In consideration of past source evaluation findings and conclusions, and the similar characteristics of this event compared to those previous, RFPO does not believe a comprehensive search for new source contributions is warranted. RFPO proposes the following in response to these reportable values at GS10:

- (1) A more comprehensive data evaluation for GS10 will be completed when more data become available. The resulting report would include an updated GS10 source evaluation summary using all available data at the time of publication. This evaluation will include a detailed monitoring summary, an analysis of relative sub-drainage actinide loads, a discussion of Pu/Am ratios, an assessment of water-quality correlations, and an assessment of Decontamination and

S. Gunderson, M. Aguilar
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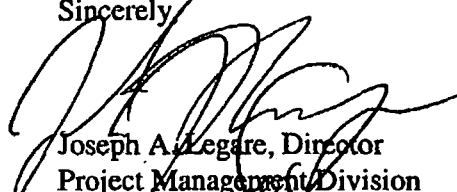
Decommissioning, Environmental Restoration, and Site Closure project activities within the GS10 drainage that could have influenced the surface water quality in the sub-drainages.

(2) Continued routine monitoring as required by RFCA and the Site Integrated Monitoring Plan.

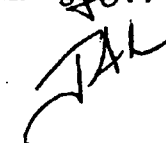
(3) Continued application and maintenance of comprehensive erosion controls and revegetation measures within the areas tributary to GS10 and other drainages.

The RFPO in consultation with CDPHE, EPA and Kaiser-Hill Company, LLC, will discuss recommendations as to further investigations and corrective actions in response to this situation. If you have any questions on this transmittal, please contact me at 303-966-2282.

Sincerely,



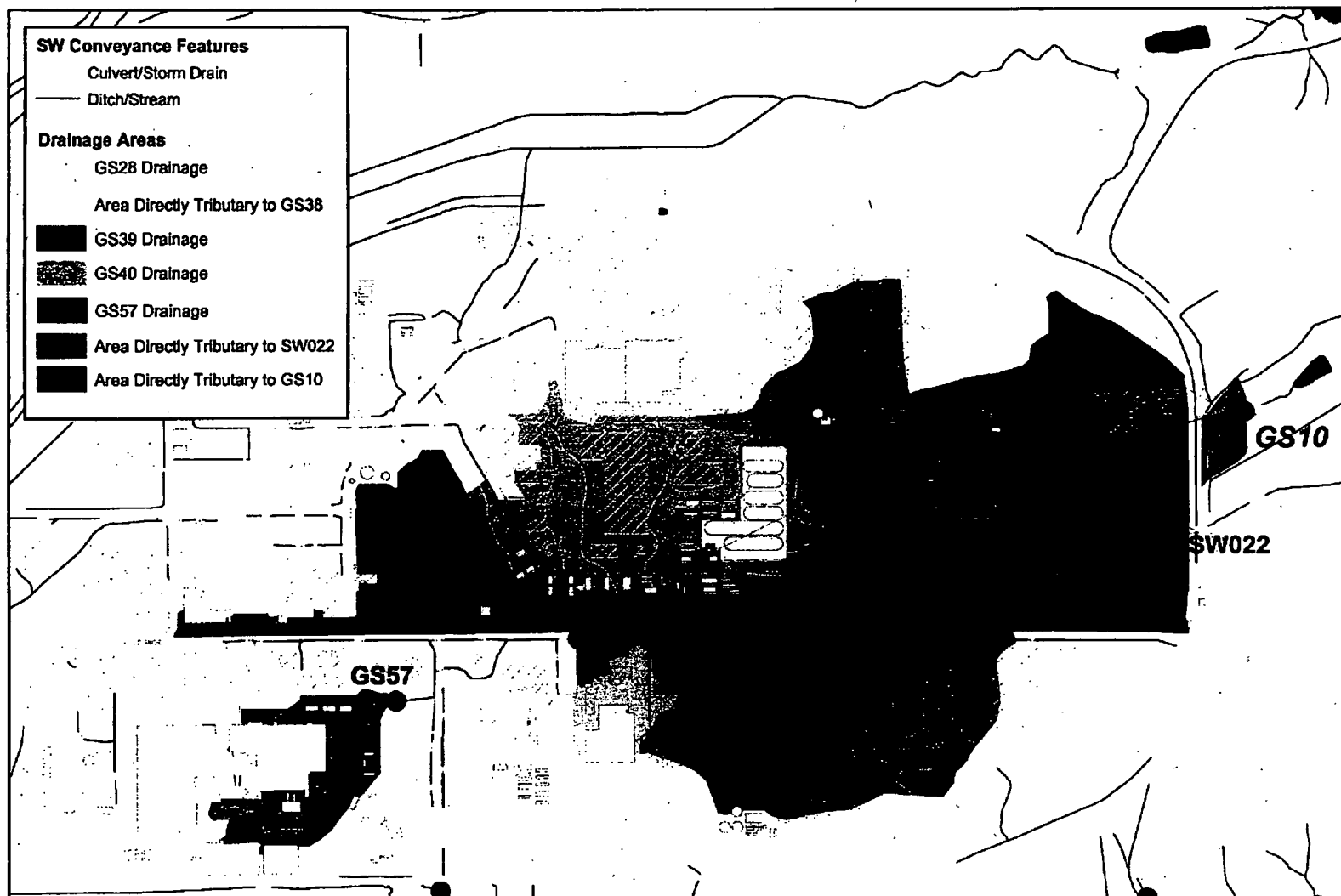
Joseph A. Legare, Director
Project Management Division



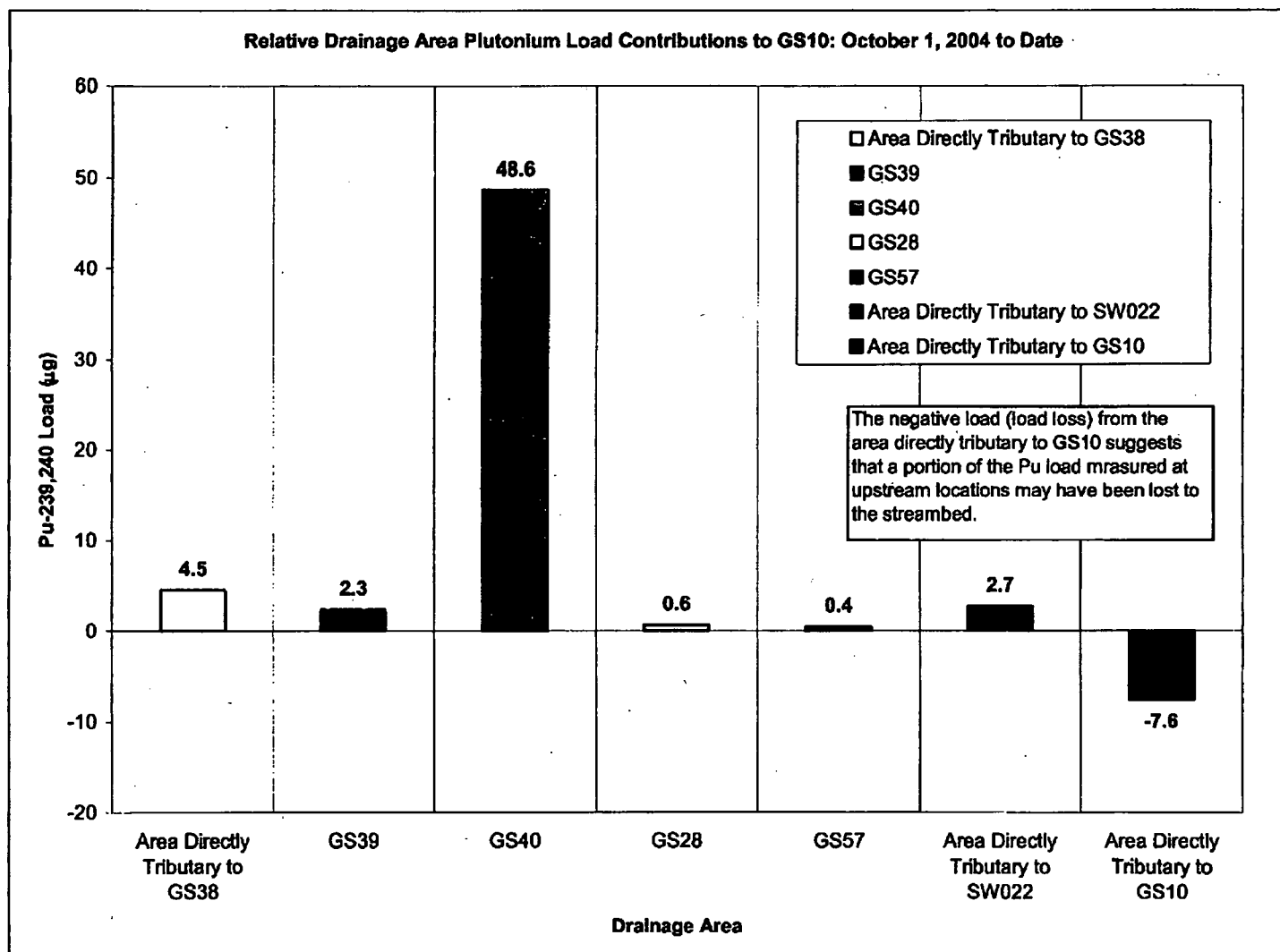
Enclosures

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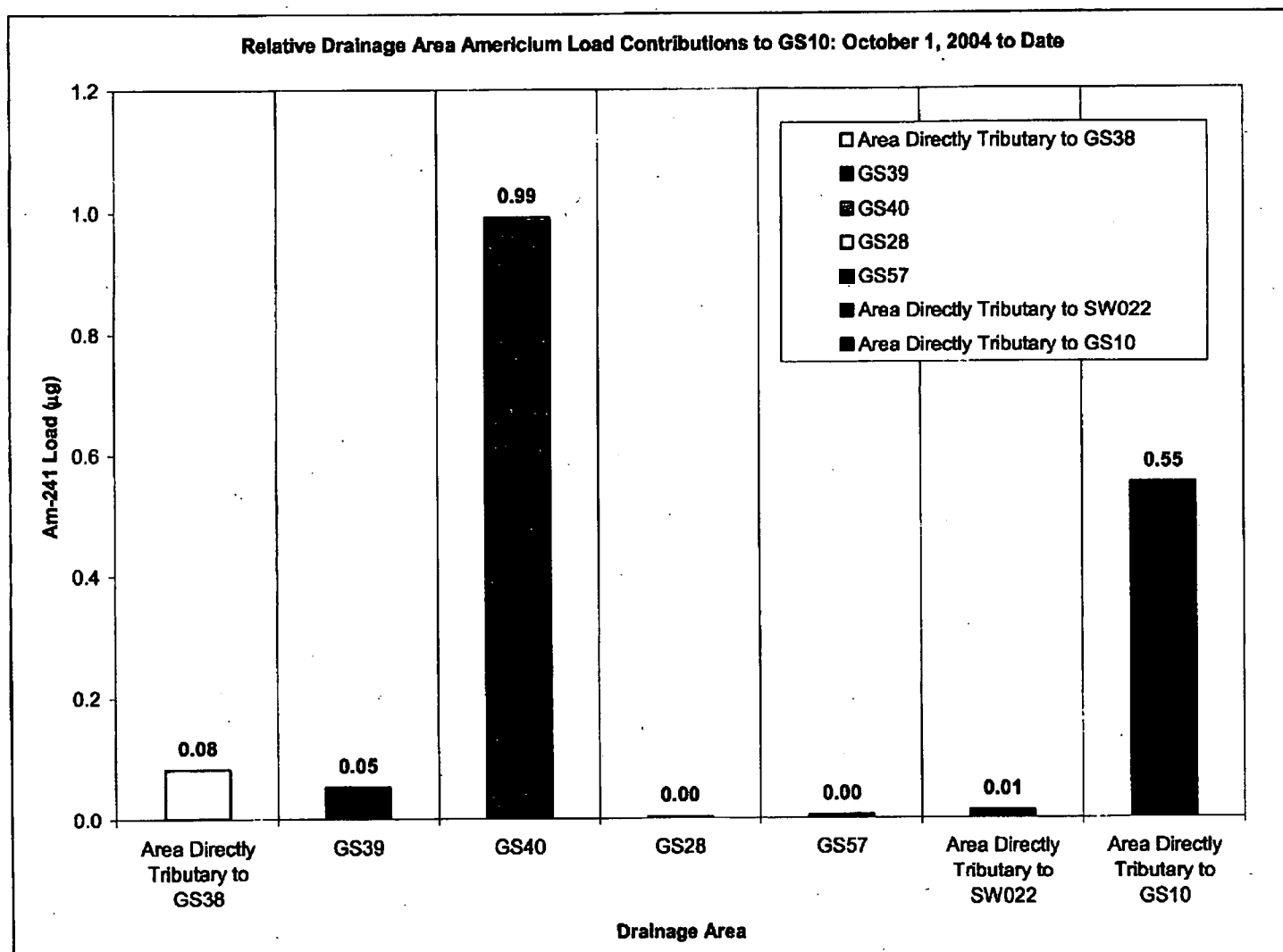
J. Rampe, PM
R. Schassburger, CPM
J. Stover, PM
M. Roy, OCC
D. Shelton, K-H
R. Nining, K-H
L. Brooks, K-H
A. Nelson, City of Westminster
S. Garcia, City of Broomfield
C. Johnson, City of Arvada
V. Lucero, City of Thornton
S. Standley, City of Northglenn
K. Korkia, RFCAB
D. Abelson, RFCLOG
Administrative Record



Enclosure 1: Map Showing GS10 Sub-Drainages and Upstream Monitoring Locations.



Enclosure 2: Relative Pu Loading Chart for GS10 Sub-Drainages.



Enclosure 3: Relative Am Loading Chart for GS10 Sub-Drainages.